

AMENDMENTS TO THE CLAIMS

Please cancel Claims 1-99; and add new Claims 100-178 as follows.

LISTING OF CLAIMS

What is claimed is:

100. (new) A scroll machine comprising:

a first scroll member having a first spiral wrap projecting outwardly from a first end plate;

a second scroll member having a second spiral wrap projecting outwardly from a second end plate, said second spiral wrap being interleaved with said first spiral wrap;

a drive member for causing said spiral wraps to orbit with respect to one another whereby said spiral wraps create pockets of progressively changing volume between a suction pressure zone at a suction pressure and a discharge pressure zone at a discharge pressure;

a plate member having first and second contact portions disposed adjacent said first scroll member, said entire first scroll member being covered by said plate member;

a discharge passage placing one of said pockets in fluid communication with said discharge pressure zone, said discharge passage extending through said plate member and said first end plate;

a first annular seal disposed between said first contact portion of said plate member and said first end plate and surrounding said discharge passage;

a second annular seal disposed between said second contact portion of said plate member and said first end plate and surrounding said first annular seal, thereby defining a chamber between said annular seals; and

a passage for placing compressed fluid at a pressure intermediate said suction pressure and said discharge pressure in fluid communication with said chamber to pressure bias said first scroll member toward said second scroll member.

101. (new) A scroll machine according to Claim 100 wherein said first and second contact portions lie in spaced parallel planes.

102. (new) A scroll machine according to Claim 100 wherein said first and second contact portions lie in the same plane.

103. (new) A scroll machine according to Claim 100 wherein one of said first and second annular seals is disposed within a seal groove.

104. (new) A scroll machine according to Claim 103 wherein said seal groove is disposed within said first scroll member.

105. (new) A scroll machine according to Claim 103 wherein said seal groove is disposed within said plate member.

106. (new) A scroll machine according to Claim 103 wherein said seal groove is generally rectangular in shape.

107. (new) A scroll machine according to Claim 103 wherein said seal groove includes a wall which defines a tapered portion.

108. (new) A scroll machine according to Claim 103 wherein said seal groove includes a wall which defines a double tapered portion.

109. (new) A scroll machine according to Claim 103 wherein said seal groove includes a wall which defines a reverse taper.

110. (new) A scroll machine according to Claim 103 wherein said seal groove includes a wall which defines a reverse double taper.

111. (new) A scroll machine according to Claim 103 wherein said seal groove includes a wall which defines a reverse lip.

112. (new) A scroll machine according to Claim 103 wherein said seal groove includes a wall which defines a first tapered portion, a flat portion and a second tapered portion.

113. (new) A scroll machine according to Claim 103 wherein said seal groove includes a wall which defines a curved portion.

114. (new) A scroll machine according to Claim 100 wherein one of said first and second annular seals is a one-way seal.

115. (new) A scroll machine according to Claim 100 wherein one of said first and second annular seals is an L-shaped seal.

116. (new) A scroll machine according to Claim 100 wherein one of said first and second annular seals defines a notch.

117. (new) A scroll machine according to Claim 100 wherein one of said first and second annular seals is manufactured from Teflon®.

118. (new) A scroll machine comprising: ✓

a first scroll member having a first spiral wrap projecting outwardly from a first end plate;

a second scroll member having a second spiral wrap projecting outwardly from a second end plate, said second spiral wrap being interleaved with said first spiral wrap;

a drive member for causing said spiral wraps to orbit with respect to one another whereby said spiral wraps create pockets of progressively changing volume between a suction pressure zone at a suction pressure and a discharge pressure zone at a discharge pressure;

a plate member having first and second contact portions disposed adjacent said first scroll member, said entire first scroll member being covered by said plate member;

a discharge passage placing one of said pockets in fluid communication with said discharge pressure zone, said discharge passage extending through said plate member and said first end plate;

a first annular seal disposed between said first contact portion of said plate member and said first end plate and surrounding said discharge passage;

a second annular seal disposed between said second contact portion of said plate member and said first end plate and surrounding said first annular seal, thereby defining a chamber between said annular seals;

a passage for placing compressed fluid at a pressure intermediate said suction pressure and said discharge pressure in fluid communication with said chamber to pressure bias said first scroll member toward said second scroll member; and

a vapor injection system in communication with one of said pockets of progressively changing volume, said vapor injection system injecting pressurized fluid into said one pocket.

119. (new) A scroll machine according to Claim 118 wherein said first and second contact portions lie in spaced parallel planes.

120. (new) A scroll machine according to Claim 118 wherein said first and second contact portions lie in the same plane.

121. (new) A scroll machine according to Claim 118 wherein one of said first and second annular seals is disposed within a seal groove.

122. (new) A scroll machine according to Claim 121 wherein said seal groove is disposed within said first scroll member.

123. (new) A scroll machine according to Claim 121 wherein said seal groove is disposed within said plate member.

124. (new) A scroll machine according to Claim 121 wherein said seal groove is generally rectangular in shape.

125. (new) A scroll machine according to Claim 121 wherein said seal groove includes a wall which defines a tapered portion.

126. (new) A scroll machine according to Claim 121 wherein said seal groove includes a wall which defines a double tapered portion.

127. (new) A scroll machine according to Claim 121 wherein said seal groove includes a wall which defines a reverse taper.

128. (new) A scroll machine according to Claim 121 wherein said seal groove includes a wall which defines a reverse double taper.

129. (new) A scroll machine according to Claim 121 wherein said seal groove includes a wall which defines a reverse lip.

130. (new) A scroll machine according to Claim 121 wherein said seal groove includes a wall which defines a first tapered portion, a flat portion and a second tapered portion.

131. (new) A scroll machine according to Claim 121 wherein said seal groove includes a wall which defines a curved portion.

132. (new) A scroll machine according to Claim 118 wherein one of said first and second annular seals is a one-way seal.

133. (new) A scroll machine according to Claim 118 wherein one of said first and second annular seals is an L-shaped seal.

134. (new) A scroll machine according to Claim 118 wherein one of said first and second annular seals defines a notch.

135. (new) A scroll machine according to Claim 118 wherein one of said first and second annular seals is manufactured from Teflon®.

136. (new) A scroll machine according to Claim 118 wherein said vapor injection system operates in a pulse width modulation mode.

137. (new) A scroll machine comprising:

a first scroll member having a first spiral wrap projecting outwardly from a first end plate;

a second scroll member having a second spiral wrap projecting outwardly from a second end plate, said second spiral wrap being interleaved with said first spiral wrap;

a drive member for causing said spiral wraps to orbit with respect to one another whereby said spiral wraps create pockets of progressively changing volume between a suction pressure zone at a suction pressure and a discharge pressure zone at a discharge pressure;

a plate member having first and second contact portions disposed adjacent said first scroll member, said entire first scroll member being covered by said plate member;

a discharge passage placing one of said pockets in fluid communication with said discharge pressure zone, said discharge passage extending through said plate member and said first end plate;

a first annular seal disposed between said first contact portion of said plate member and said first end plate and surrounding said discharge passage;

a second annular seal disposed between said second contact portion of said plate member and said first end plate and surrounding said first annular seal, thereby defining a chamber between said annular seals;

a passage for placing compressed fluid at a pressure intermediate said suction pressure and said discharge pressure in fluid communication with said chamber to pressure bias said first scroll member toward said second scroll member; and

a capacity modulation system with said scroll machine, said capacity modulation system operable to vary the capacity of said scroll machine.

138. (new) A scroll machine according to Claim 137 wherein said first and second contact portions lie in spaced parallel planes.

139. (new) A scroll machine according to Claim 137 wherein said first and second contact portions lie in the same plane.

140. (new) A scroll machine according to Claim 137 wherein one of said first and second annular seals is disposed within a seal groove.

141. (new) A scroll machine according to Claim 140 wherein said seal groove is disposed within said first scroll member.

142. (new) A scroll machine according to Claim 140 wherein said seal groove is disposed within said plate member.

143. (new) A scroll machine according to Claim 140 wherein said seal groove is generally rectangular in shape.

144. (new) A scroll machine according to Claim 140 wherein said seal groove includes a wall which defines a tapered portion.

145. (new) A scroll machine according to Claim 140 wherein said seal groove includes a wall which defines a double tapered portion.

146. (new) A scroll machine according to Claim 140 wherein said seal groove includes a wall which defines a reverse taper.

147. (new) A scroll machine according to Claim 140 wherein said seal groove includes a wall which defines a reverse double taper.

148. (new) A scroll machine according to Claim 140 wherein said seal groove includes a wall which defines a reverse lip.

149. (new) A scroll machine according to Claim 140 wherein said seal groove includes a wall which defines a first tapered portion, a flat portion and a second tapered portion.

150. (new) A scroll machine according to Claim 140 wherein said seal groove includes a wall which defines a curved portion.

151. (new) A scroll machine according to Claim 137 wherein one of said first and second annular seals is a one-way seal.

152. (new) A scroll machine according to Claim 137 wherein one of said first and second annular seals is an L-shaped seal.

153. (new) A scroll machine according to Claim 137 wherein one of said first and second annular seals defines a notch.

154. (new) A scroll machine according to Claim 137 wherein one of said first and second annular seals is manufactured from Teflon®.

155. (new) A scroll machine according to Claim 137 wherein said capacity modulation system operates in a pulse width modulation mode.

156. (new) A scroll machine according to Claim 137 wherein said capacity modulation system is in communication with one of said pockets of progressively changing volume.

157. (new) A scroll machine comprising:

a first scroll member having a first spiral wrap projecting outwardly from a first end plate;

a second scroll member having a second spiral wrap projecting outwardly from a second end plate, said second spiral wrap being interleaved with said first spiral wrap, said first scroll member being mounted for axial movement with respect to said second scroll member;

a drive member for causing said spiral wraps to orbit with respect to one another whereby said spiral wraps create pockets of progressively changing volume between a suction pressure zone at a suction pressure and a discharge pressure zone at a discharge pressure;

a plate member having first and second contact portions disposed adjacent said first scroll member, said entire first scroll member being covered by said plate member;

a discharge passage placing one of said pockets in fluid communication with said discharge pressure zone, said discharge passage extending through said plate member and said first end plate;

a first annular seal disposed between said first contact portion of said plate member and said first end plate and surrounding said discharge passage;

a second annular seal disposed between said second contact portion of said plate member and said first end plate and surrounding said first annular seal, thereby defining a chamber between said annular seals; and,

a passage for placing compressed fluid at a pressure intermediate said suction pressure and said discharge pressure in fluid communication with said chamber to pressure bias said first scroll member toward said second scroll member.

158. (new) A scroll machine according to Claim 157 wherein said first and second contact portions lie in spaced parallel planes.

159. (new) A scroll machine according to Claim 157 wherein said first and second contact portions lie in the same plane.

160. (new) A scroll machine according to Claim 157 wherein one of said first and second annular seals is disposed within a seal groove.

161. (new) A scroll machine according to Claim 160 wherein said seal groove is disposed within said first scroll member.

162. (new) A scroll machine according to Claim 160 wherein said seal groove is disposed within said plate member.

163. (new) A scroll machine according to Claim 160 wherein said seal groove is generally rectangular in shape.

164. (new) A scroll machine according to Claim 160 wherein said seal groove includes a wall which defines a tapered portion.

165. (new) A scroll machine according to Claim 160 wherein said seal groove includes a wall which defines a double tapered portion.

166. (new) A scroll machine according to Claim 160 wherein said seal groove includes a wall which defines a reverse taper.

167. (new) A scroll machine according to Claim 160 wherein said seal groove includes a wall which defines a reverse double taper.

168. (new) A scroll machine according to Claim 160 wherein said seal groove includes a wall which defines a reverse lip.

169. (new) A scroll machine according to Claim 160 wherein said seal groove includes a wall which defines a first tapered portion, a flat portion and a second tapered portion.

170. (new) A scroll machine according to Claim 160 wherein said seal groove includes a wall which defines a curved portion.

171. (new) A scroll machine according to Claim 157 wherein one of said first and second annular seals is a one-way seal.

172. (new) A scroll machine according to Claim 157 wherein one of said first and second annular seals is an L-shaped seal.

173. (new) A scroll machine according to Claim 157 wherein one of said first and second annular seals defines a notch.

174. (new) A scroll machine according to Claim 157 wherein one of said first and second annular seals is manufactured from Teflon®.

175. (new) A scroll machine according to Claim 157 wherein said scroll machine further comprises a vapor injection system.

176. (new) A scroll machine according to Claim 175 wherein said vapor injection system operates in a pulse width modulation mode.

177. (new) A scroll machine according to Claim 157 wherein said scroll machine further comprises a capacity modulation system.

178. (new) A scroll machine according to Claim 177 wherein said capacity modulation system operates in a pulse width modulation mode.